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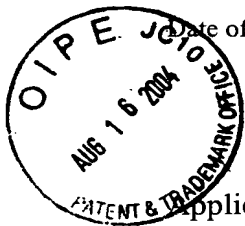
PATENT

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8/13/04 JTR

John T. Pienkos, Reg. No. 42,997



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): David Charles Schwartz, *et al.*  
Serial No.: 10/713,898  
Filed: October 18, 2002  
For: MICRO FLUIDIC SYSTEM FOR SINGLE MOLECULE IMAGING  
Docket No.: 960296.99047

INFORMATION DISCLOSURE STATEMENT

This paper is being presented for filing in the above case pursuant to Rules 97 and 98 of the Rules of Practice.

Four sets of Forms PTO/SB/08A "Information Disclosure Statement by Applicant" are attached. The first set of Forms PTO/SB/08A lists newly-cited references, and copies of the references are enclosed.

As for the remaining three sets of Forms PTO/SB/08A, these respectively list references that were cited during the prosecution of three patent applications of which the present Application claims the benefit, namely, U.S. patent application Nos. 09/962,802 (now U.S. Patent No. 6,610,256); 08/855,410 (now U.S. Patent No. 6,294,136); and 08/415,710 (now U.S. Patent No. 5,720,928). The Applicants respectfully submit that, pursuant to 37 CFR 1.98(d), no copies of the references listed on these Forms PTO/SB/08A need be submitted to the Patent Office.

No additional fees for filing this paper are believed to be due. However, the Commissioner is hereby authorized to charge any additional fees due or to credit any overpayment to deposit account no. 17-0055.

Respectfully submitted,  
DAVID CHARLES SCHWARTZ, *et al.*

By: JTR

John T. Pienkos  
Reg. No. 42,997  
Attorney for Applicant  
Quarles & Brady LLP  
411 E. Wisconsin Avenue  
Milwaukee WI 53202-4497  
(414) 277-5777

**Complete if Known**

*(Use as many sheets as necessary)*

Sheet	1	of	2
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Application Number	10/713,898
Filing Date	October 18, 2002
First Named Inventor	David Charles Schwartz, et al.
Art Unit	
Examiner Name	
Attorney Docket Number	960296.99047

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FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
		WO 94/18218	08-18-1994	Seq. Ltd.		
		WO 00/09757	02-24-2000	U.S. Genomics		
		PCT Int'l Search Report				

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		Application Number	10/713,898		
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Sheet	2	of	2	Attorney Docket Number	960296.99047

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		Chih-Ming Ho, "Fluidics - The Link Between Micro and Nano Sciences and Technologies", Proceedings of the IEEE 14th Annual International Conference On Microelectro Mechanical Systems. MEMS 2001. Interlaken, Switzerland, Jan 21-25,	
		2001, IEEE International Micro Electro Mechanical Systems Conference, New York, NY: IEEE, US, vol. CONF. 14, (01-21-2001), pgs 375-384, XP010534628 ISBN: 0-7803-5998-4, pg 378-379.	
		Unger M A Et Al: "Monolithic Microfabricated Valves and Pumps by Multilayer Soft Lithography", Science, American Association For The Advancement Of Science, US, vol. 288, 04/07/2000, pgs. 113-116, XP002192277 ISSN: 0036-8075 Figure 1.	
		Stix, Gary; "Thinking Big-A Harvard Medical School dropout aims to usher in the personal-genomics ear," Innovations, Scientific American, June 2002, pgs. 30-31.	
		Stikeman, Alexandra, "Nanobiotech Makes The Diagnosis," Technology Review, May 2002, pgs. 61-66.	

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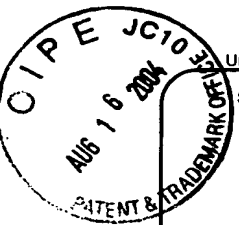
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Prior Art Cited in US. PATENT NO. 5,720,928



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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Attorney Docket Number	960296.99047

Sheet 1 of 9

### U. S. PATENT DOCUMENTS

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		Number-Kind Code <sup>2</sup> (if known)			
		US- 4,473,452	Sep., 1984	Cantor et al.	
		US- 4,695,548	Sep., 1987	Cantor et al.	
		US- 4,737,251	Apr., 1988	Carle et al.	
		US- 4,767,700	Aug., 1988	Wallace	
		US- 4,870,004	Sep., 1989	Conroy et al.	
		US- 5,059,294	Oct., 1991	Lizardi	
		US- 5,079,169	Jan., 1992	Chu et al.	
		US- 5,314,829	May, 1994	Coles	436/165
		US- 5,380,833	Jan., 1995	Urdea	
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		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
		FR 2605472	Apr., 1988	Alain Bouillet		
		WO 84/02001	May, 1984	Trustees of Columbia Univers		
		WO 87/01955	Sep., 1987	Washington University		

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		Chattoraj et al., "DNA Condensation with Polyamines", J. Mol. Biol. 121, (1978), pp.327-337.	
		Ohi et al., "Mapping of Mitochondrial 4S RNA Genes... by Electron Microscopy", J. Mol. Biol. 212, (1978), pp 299-310.	
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		Guo et al., 1993, "Sizing of Large DNA Molecules by Hook Formation in a Loose Matrix", J. Biomol. Structure and Dynamics 11: 1-10.	
		Hansma, H.G. et al., 1993, "Atomic force microscopy of DNA in aqueous solutions", Nucleic Acids Research 21: 505-512.	
		Karrasch, S. et al., 1993, "Covalent Binding of Biological Samples to Solid Supports for Scanning Probe Microscopy in Buffer Solution" Biophysical J. 65: 2437-2446.	
		Koob et al., 1992, "RecA-AC: single-site cleavage of plasmids and chromosomes at any predetermined restriction site" Nucleic Acids Res. 20:5831.	

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/713,898
		Filing Date	October 16, 2002
		First Named Inventor	David Charles Schwartz, et al.
		Group Art Unit	
		Examiner Name	
Sheet 3 of 9	Attorney Docket Number	960296.99047	

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		Zenhausen et al., 1992, "Imaging of DNA by Scanning Force Microscopy", J. Struct. Biol. 108: 69-73.	
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		Campbell et al., 1991, "Generation of a nested series of interstitial deletions in yeast artificial chromosomes carrying human DNA", Proc. Natl. Acad. Sci. USA 88:5744.	
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		Church and Gilbert, 1984, "Genomic sequencing", Proc. Natl. Acad. Sci. USA 81: 1991.	

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		Schwartz and Cantor, 1984, "Separation of Yeast Chromosome-Sized DNAs by Pulsed Field Gradient Gel Electrophoresis", Cell 37: 67.	
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		Smith et al., 1989, "Observation of Individual DNA Molecules Undergoing Gel Electrophoresis", Science 242: 203.	
		Kucherlapati et al., 1988, Genetic Recombination pp. 92-106.	
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		Woolf et al., 1988, "Mapping genomic organization by field inversion and two dimensional gel electrophoresis", Nucleic Acids Research 16(9): 3863.	
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		Application Number	10/713,898		
		Filing Date	October 18, 2002		
		First Named Inventor	David Charles Schwartz, et al.		
		Group Art Unit			
		Examiner Name			
		Attorney Docket Number	960296.99047		
Sheet	7	of	9		

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		Chattoraj et al., 1978, "DNA Coordination with polyamines", J. Mol. Biol. 121: 327.	
		Ohi et al., 1978, "Mapping of Mitochondria 4S RNA genes in Xenopus laevis by electron microscopy", J. Mol. Biol. 121: 299.	
		Gurrieri et al., 1990, "Imaging of kinked configurations of DNA molecules undergoing orthogonal field alternating gel electrophoresis by fluorescence microscopy", Biochemistry 29: 3396-3401.	
		Bendich and Smith, 1990, "Moving pictures and pulsed-field gel electrophoresis show linear DNA molecules form chloroplasts and mitochondria" Current Genetics 17: 421-425.	
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		Stellwagen, 1988, "Effect of pulsed and reversing electric fields on the orientation of linear and supercoiled DNA molecules in Agarose Gels", Biochemistry 27: 6417.	
		Schwartz, et al., "Conformational Dynamics of Individual DNA Molecules During Gel Electrophoresis", Nature, Apr. 6, 1989, pp. 520-522.	
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				First Named Inventor	David Charles Schwartz, et al.
				Group Art Unit	
				Examiner Name	
				Attorney Docket Number	960296.99047

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		Zubay, Biochemistry, 1988, pp. 918-919.	
		Kucherlapati et al., Genetic Recombination, 1988, pp. 92-106.	
		Smith et al., "Observation of Individual DNA Molecules Undergoing Gel Electrophoresis", Science 242, Jan. 13, 1989 pp. 203-206.	
		Carle et al., "Electrophoretic Separations of Large DNA molecules...", Science, Apr. 4, 1986, pp. 65-68.	
		Dev. et al., "Techniques for Chromosome Analysis", Techniques in SOmatic Cell Genetics, edited by Shay, 1982, pp. 493-503.	
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		Stellwagon, "Effect of Pulsed and Reversing Electric Fields..." Biochem. 17, 1988, pp. 6417-6424.	
		Manuelidis et al., Biol. Abstr. 76(4), Ref. No. 27153, P. 2940.	
		Gerlach et al. (1984) Cytometry 5:562-571.	
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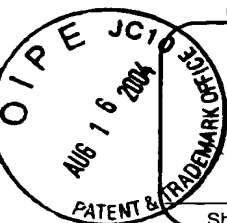
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Prior Art Cited in U.S. Patent No. 6,294,136

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Sheet 1 of 8

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Application Number	10/713,898
Filing Date	October 18, 2002
First Named Inventor	David Charles Schwartz, et al.
Art Unit	
Examiner Name	
Attorney Docket Number	960296.99047

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		Number-Kind Code <sup>2</sup> (if known)			
		US- 4,473,452	Sep., 1984	Cantor et al.	204/180
		US- 4,695,548	Sep., 1987	Cantor et al.	435/179
		US- 4,737,251	Apr., 1988	Carle et al.	204/182
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		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
		FR 2605472	Apr., 1988	Alain Bouillet		
		WO 84/02001	May, 1984	Trustees of Columbia Univers		
		WO 87/01955	Sep., 1987	Washington University		

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		Filing Date	October 18, 2002		
		First Named Inventor	David Charles Schwartz, et al.		
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		Allison et al., 1992, "Immobilization of DNA for Scanning Probe Microscopy", Proc. Natl. Acad. Sci. USA 89: 10129-10133.	
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		Chumakov et al., 1992, "Continuum of Overlapping Clones Spanning the Entire Human Chromosome 21q", Nature 359: 380-387.	
		Church and Gilbert, 1984, "Genomic Sequencing", Proc. Natl. Acad. Sci. USA 81: 1991-1995.	
		Cohen et al., 1993, "A First-Generation Physical Map of the Human Genome", Nature 366: 698-701.	
		Dev et al., 1982, "Techniques for Chromosome Analysis", Techniques in Somatic Cell Genetics, edited by Shay, pp. 493-503.	
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		Perkins et al., 1994, "Direct Observation of Tube-like Motion of a Single Polymer Chain", Science 264: 819-822.	

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				Application Number	10/713,898	
Sheet		6	of	8	Filing Date	October 18, 2002
					First Named Inventor	David Charles Schwartz, et al.
					Group Art Unit	
					Examiner Name	
					Attorney Docket Number	960296.99047

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		Poddar and Maniloff, 1986, "Chromosome Analysis by Two-Dimensional Fingerprinting", Gene 49: 93-102.	
		Porath and Axen, 1976, "Immobilization of Enzymes to Agar, Agarose, And Sephadex Supports", Meth. Enzymol. 44: 19-45.	
		Rampino and Chrambach, 1991, "Conformational Correlatives of DNA Band Compression and Bidirectional Migration During Field Inversion Gel Electrophoresis, Detected by Quantitative Video Epifluorescence Microscopy", Biopolymers 31: 1297-1307.	
		Romling et al., 1989, "a Physical Genome Map of Pseudomonas aeruginosa", EMBO J. 8: 4081-4089.	
		Schwartz et al., 1989, "Conformational Dynamics of Individual DNA Molecules During Gel Electrophoresis", Nature 338: 520-522.	
		Schwartz et al., 1989, "ED: Pulsed Electrophoresis Instrument", Nature 342: 575-576.	
		Schwartz et al., 1984, "Separation of Yeast Chromosome-Sized DNAs by Pulsed field Gradient Gel Electrophoresis", Cell 37: 67-75.	
		Smith et al., 1992, "Direct Mechanical Measurements of the Elasticity of Single DNA Molecules by Using Magnetic Beads", Science 258: 1122-1126.	
		Smith and Bendich, 1990, "Electrophoretic Charge Density and Persistence Length of DNA as Measured by Fluorescence Microscopy", Biopolymers 29: 1167-1173.	
		Smith et al., 1989, "Observation of Individual DNA Molecules Undergoing Gel Electrophoresis", Science 242: 203-206.	
		Smith and Birnstiel, 1976, "A Simple Method for DNA Restriction Site Mapping", Nucl. Acids Res. 3: 2387-2399.	

Examiner Signature		Date Considered	
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Substitute for form 1449B/PTO  <h2 style="text-align: center; margin: 0;">INFORMATION DISCLOSURE STATEMENT BY APPLICANT</h2> <p style="text-align: center; font-size: small;">(use as many sheets as necessary)</p>		<b>Complete if Known</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Application Number</td> <td>10/713,898</td> </tr> <tr> <td>Filing Date</td> <td>October 18, 2002</td> </tr> <tr> <td>First Named Inventor</td> <td>David Charles Schwartz, et al.</td> </tr> <tr> <td>Group Art Unit</td> <td></td> </tr> <tr> <td>Examiner Name</td> <td></td> </tr> <tr> <td>Attorney Docket Number</td> <td>960296.99047</td> </tr> </table>		Application Number	10/713,898	Filing Date	October 18, 2002	First Named Inventor	David Charles Schwartz, et al.	Group Art Unit		Examiner Name		Attorney Docket Number	960296.99047
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		Southern, 1975, "Detection of Specific Sequences among DNA Fragments Separated by Gel Electrophoresis", J. Mol. Biol. 98: 503-517.	
		Stallings et al., 1990, "Physical Mapping of Human Chromosomes by Repetitive Sequence Fingerprinting", Proc. Natl. Acad. Sci. USA 87: 6218-6222.	
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		van den Engh et al., 1992, "Estimating Genomic Distance from DNA Sequence Location in Cell Nuclei by a Random Walk Model", Science 257: 1410-1412.	
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		Zubay, 1988, Biochemistry (Macmillan Publishing Company, New York) pp. 918-919.	

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